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ANALYSIS

High value forests, hidden economies and elite capture: Evidence from forest user groups in Nepal's Terai[☆]

Vegard Iversen^{b,*}, Birka Chhetry^a, Paul Francis^b, Madhu Gurung^a,
Ghanendra Kafle^a, Adam Pain^b, Janet Seeley^b

^aNatural and Organisational Resources Management Services (NORMS), P.O. Box 21676, Maitidevi, Kathmandu, Nepal

^bSchool of Development Studies, University of East-Anglia, Norwich NR4 7TJ, UK

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Abstract

This paper argues that the policy on decentralised forest management in Nepal, informed by experiences from the Middle Hills, overlooks the complexity and conflictual potential of establishing effective and equitable user groups in the Terai. Our case study evidence from West-Central Terai suggests that the combination of high forest value and weak institutional control mechanisms create opportunities for local elites to siphon off substantial shares of the benefits generated by valuable local forests. The rents created by autonomous FUG policies give rise to stark distributional biases, a scramble for control and institutional instability. We estimate the extent of elite capture and argue that institutional reform needs are intimately linked to controlling what we call the hidden economy of forest user groups.

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Keywords: Community forestry; Hidden economy; Benefit distribution; Elite capture; Nepal

1. Introduction

Over the last 15 years, pessimistic forecasts about the management of local resources like forests and

rangelands in developing countries, most powerfully expressed in [Hardin's \(1968\)](#) "Tragedy of the Commons", have been replaced by a new optimism. Theoretical progress, conceptual clarifications and a large number of in-depth case studies have paved the way for a more nuanced understanding of the potential and actual contributions of rural communities to the management of local natural resources in developing countries ([Ostrom, 1990](#); [Baland and Platteau, 1996](#); [Agrawal, 2001](#)).

The likelihood that local collective action will be effective is determined by the properties of the resources and communities in question. Much re-

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* Corresponding author. Fax: +44 1603 591170.

E-mail address: v.iversen@uea.ac.uk (V. Iversen).

search effort has therefore been geared towards identifying the characteristics that make a difference. Inspired by [Wade's \(1988\)](#) analysis of indigenous systems for irrigation management in South-India and [Ostrom's \(1990\)](#) articulation of principles for design of effective local institutions, the number of such characteristics identified has showed few signs of abating. In a recent review, [Agrawal \(2001\)](#) identified no fewer than 36 variables conducive to effective collective action.

In spite of this abundance, critical relations between resource, community and pivotal outcomes remain unexplored. A salient example of this neglect is the issue of how contrasting characteristics of forest resources and communities in Nepal's Middle Hills and Terai¹ affect the scope for collective action and its consequences.

Whereas Nepal is widely regarded as a success story in community-based forest management (e.g. [Arnold, 1998](#)), existing studies have focused on the Hills, on community forest processes and on changes in the condition of the forest, often at the expense of analysis of impacts on equity. With 35% of Nepal's rural population below the poverty line (Nepal Living Standards Survey 2003–04, www.cbs.gov.np), few issues are more important than who the winners and losers from community forestry have turned out to be.²

Such gaps in knowledge are made more urgent by community forestry's rapid progress into the Terai with its heterogeneous communities and high value hardwood forests. This paper argues that the present policy, informed by experiences from the Hills, ignores the complexity and conflictual potential associated with establishing effective and equitable forest user groups (FUGs) in the Terai. This challenges the views of [Chakraborty \(2001\)](#) and others, who suggest that an unmodified

version of community forestry is viable also for the Terai.³

Using case study evidence from five Village Development Committees in West Central Terai, our central argument is that the combination of high forest value and inadequate institutional control mechanisms create opportunities for local elites to siphon off considerable shares of the benefits generated by valuable local forests. Our evidence suggests that rents created by policies adopted by autonomous forest user groups give rise to inequity, a scramble for control and institutional instability within FUGs that control high value forests.

The paper is organised as follows: Section 2 provides a brief introduction to the Terai, reviews the background for and experiences with decentralised forest management in Nepal and pinpoints the predominance of community forestry in the Hills. Contrasts between the Terai and Hills in terms of characteristics of forest user groups, community heterogeneity and the commercial values of forests are emphasised. Section 3 describes the study area, issues in research design and methods for data collection. Section 4 reviews theory and evidence on equity and other outcomes from community forestry. Section 5 elaborates on the concepts of elite capture and the hidden economy⁴ of a forest user group. Section 6 argues that the size and distributional profile of the hidden economy provides a useful indicator of a user group's vulnerability to elite capture. Data for a key commodity are then used to illustrate the size and distributional profile of the main constituents of the hidden economy in a Terai FUG. We suggest that institutional reform needs are intimately linked to regulating this hidden economy.

¹ [FAO \(1999, p. 7\)](#) divides Nepal into three regions: the Middle Hills, including the Mahabharat and southern Himalaya foothills, the Upper Hills including the Himalayas and inner Himalayas and the Terai comprising the southern plains and the Siwaliks.

² A small body of recent work addresses the distributional impacts of community forestry ([Bhattarai and Ojha, 2000](#); [Richards et al., 2003](#) and [Adhikari et al., 2004](#)). While bringing the discussion significant steps forward, these studies miss out on the crucial equity impacts of the timber-economies of many Terai FUGs. More on this below.

³ The main explanation for the discrepancy between [Chakraborty's](#) and our observations is that FUGs covered by his case study were managing degraded forests. His evidence did not, therefore, capture the important and conflict-ridden dimension of high forest value.

⁴ The term hidden economy has been synonymous with the underground, black or shadow economy with empirical analyses focusing unregistered economic activities in transition and other countries ([Lacko, 2000](#)). Our use of the term is distinctly micro-oriented. A definition suitable for analysis of FUGs is presented below.

2. Background

2.1. The Terai

The Terai makes up a 26–32 km wide belt of fertile plain in Nepal's southern parts. 11.2 million people or 48.4% of Nepal's population, live in 20 Terai districts (Ministry of Population and Environment, 2002).

Until the 1960s, this was a malaria-infested zone, populated mainly by the communities of ethnic Dhanuwar and Tharu. With the proximate eradication of malaria, the Government of Nepal initiated a settlement programme promoting movement from the Hills (Ghimire, 1992). The construction of the East–West Highway in the early 1970s and the promise of new land prompted further waves of in-migration, mostly from nearby districts. Population growth rates surged and reached figures well above the national average. In Nawalparasi district in Mid-Western Terai, the population growth between 1961 and 1986 was equivalent to 5.1% per annum (ibid).

This influx of new settlers created heterogeneous local communities and negatively affected the quality and quantity of Terai forests (Soussan et al., 1995). Recent estimates suggest deforestation rates in the Terai of 1.3% per year between 1978/1979 and 1990/1991 (Ministry of Forest and Soil Conservation, 1999). In central Terai, where the present study was undertaken, settlements patterns are typically such that groups of Indian origin, including Brahmins, Yadhavs and a significant proportion of Muslims, dominate the southern areas of the districts. Further north and nearer to the hills, descendants of the original Tharu inhabitants have been outnumbered by migrants from the hills. Popularly known as “Pahadiays”, these hill migrants are of mixed ethnic origin, and include Magar, Chettri, Kami, Gurungs and Newars.

Conflicts over land and other resources are a prominent feature of the recent history of the Terai (e.g. Ghimire, 1992).⁵

Our analysis starts with a brief review of community forestry in Nepal, highlighting and explaining

⁵ Various hypotheses about the pathways to deforestation in the Terai have been proposed; both the landless (*sukumbasis*) and colluding local elites share some blame (Ojha, 2000), but precise evidence is lacking.

Table 1

Community forestry in the Terai and the hills

	Hills	Terai	Total
No. of FUGs	11,341	245	11,586
Total area (ha)	871,845	38,525	910,370
Total no of HHs	1,184,497	91,936	1,276,433
Average no. of HHs/FUG	104	375	
Total FUG-income Rs	4,115,171	5,602,140	
	(<i>n</i> =7676)	(<i>n</i> =196)	

Source: Chhetry et al. (2003).

contrasts between the progress of community forestry in the Hills and the Terai.

2.2. Community forestry in Nepal

The 1993 Forest Act defined the term “community forestry” and recognised user groups as legal entities that should develop, protect and manage local forests for collective benefits. The Act strengthened the definition of users and improved weak provisions that had delayed the handover of forests to local communities under previous Acts (Kanel, 1995). The restoration of democracy and the 1993 Act are responsible for the rapid progress of community forestry in the 1990s. While user groups in 1991 numbered a few hundred, the Department of Forestry had registered 11,586 user groups by September 2002.⁶ These registered groups comprised 1,276,433 households and managed almost one million ha of forest. 98% of the registered user groups were located in the Hills while only 2% were Terai-based (Table 1).

The summary statistics in Table 1 highlight two important contrasts between user groups in the Terai and the Hills. First, the typical Terai FUG has 3.6 times as many member households as its average Hill counterpart. In addition, the total revenue of 196 Terai FUGs exceeds the corresponding figure for 7676 FUGs in the Hills. These contrasts in size and revenue flows reflect more general patterns. The predominance in the Terai of hardwood species such as Sal (*Shorea Robusta*), Sissoo (*Dalbergia Sissoo*) and Khair (*Acacia Catechu*), the access to good roads and ready cross-border markets explain the high com-

⁶ Pant (2001), Malla (2002) and Acharya (2002) review community forestry policy in Nepal.

mercial value of Terai forests. The revenue potential and the “shadow” interests within various government departments with regard to controlling these forests underpin the reluctance among key stakeholders to endorse a wider role for community forestry in the Terai (Malla, 2002).

On the policy front, the progressive 1993 Forest Act makes no formal distinction between Terai and Hills in terms of its permissive framework for community forestry. In contrast, the Master Plan for the Forestry Sector (1993) and the Agricultural Perspective Plan of 1995 explicitly prioritise community forestry in the Hills. The Community and Private Forestry Program, the largest component program of the MPFSN, was designated to meet demands for fuel, timber and fodder by stimulating participation by rural residents in developing and managing forest resources by handing-over “all accessible hill forests” to local communities (Chaudhury, 2000).

This focus was relaxed only with the introduction of Operational Forest Management Plans for Terai Districts in the 1990s. The OFMPs divided Terai forests into protection forests, production forests and potential community forests. Table 2 illustrates this division for the two study districts in West Central Terai.

Although Nawalparasi is more abundantly endowed with forest resources, the areas earmarked for community forestry in the two districts are quite similar and represent modest shares (8% and 20%) of District Forest Reserves. In addition and a contested issue, forests set aside for community forestry are often degraded.

The intensified push for extending community forestry to all Terai forests, inspired by more assertive local communities, by international donors such as the Terai-based Livelihood and Forest Programme of DFID and by Nepal-based protagonists must be

judged against the limited role of CF in the Terai so far. The main justification for this push remains what is widely perceived as the success of community forestry in the Hills. A critical question is whether experiences with community forestry in the Hills provide a robust template for designing local institutions for effective and equitable forest management in the Terai. Following a brief discussion of research design and methods for data collection, we take up this issue next.

3. Research design and methods for data collection

The present research was undertaken in Nawalparasi and Rupandehi Districts in mid-Western Terai between April 2002 and January 2003.⁷ Five Village Development Committees were purposively selected to explore impacts of site contrasts on forest condition, on equity and on other outcomes. Contrasts in dimensions such as north/south Terai, forest values, variation in the role of external agents (NGOs) in user group formation and location within and outside the bufferzone of the Royal Chitwan National Park were covered (Table 3).

This small purposive sample precludes statistical analysis, and the research findings come with the standard caveats accompanying case study evidence.⁸ Methods of data collection had qualitative and quantitative elements. Individual interviews with women and men from purposively selected households of different caste and socio-economic were complemented by group discussions and extensive use of key informants of different age, background and experience. Among these informants were individuals who were or had been key players in local

Table 2
The division of forests by category in Rupandehi and Nawalparasi Districts

	Rupandehi District		Nawalparasi District	
	ha	%	ha	%
Protection forest	18,533	58	80,950	73
Production forest	7014	22	20,856	19
Potential community/ leasehold forest	6459	20	8692	8
Total	32,006	100	110,758	100

⁷ The research was conducted under the shadow of armed conflict. With the safety of the field researchers as our foremost concern, widespread advice on the security situation was sought before beginning field research early in 2002. Two adjustments were made to the selection of study sites. First, the parts of the districts located in the Mahabharat hills, which were more insecure, were left out. Second, Kapilvastu district was dropped because of a growing threat of political violence in the district.

⁸ Observations from a larger set of sites across Nawalparasi and Rupandehi suggest that our research findings reflect more general patterns in FUGs in the two study districts (James Bampton, personal communication).

Table 3
Key characteristics of study sites

No.	Distr	Village Development Committee (VDC) ^a	Study site characteristics	Natural resources and institutions examined	Issues emerging from research:
1	N-p	M, J	Main road, market town CF boundaries, ward and ethnic inclusiveness; complex settlement	Unregistered Community Forests (CF)	
2	N-p	H	Southern Terai, no forest	Wetlands, canal-side tree planting	Political conflict in committee
3	N-p	R	Buffer zone for conservation area; high value forests	Community forests	Diversity; complexity in CF management; institutional instability, rent-seeking
4	R-d	S	Southern Terai, interior	Wetlands; handed over forest, 'under process' forest	VDC politics, community- contractor conflict
5	R-d	D	Main Road, Market town Involvement of NGOs; participatory processes	Handed over CF	

^a Both VDC and FUG names have been anonymised to prevent easy identification.

community forestry and thus were well acquainted with the history of formation and later trajectories of local user groups. The sensitive nature of the information pertaining to the hidden economy of FUGs made building of solid rapport crucial. Moreover, repeated and careful triangulation was necessary to arrive at coherent accounts of important events and actions. Needless to say, considerable time and effort on the part of the research team was required for this purpose.

4. Forest value and inequality as “drivers”—inequity and institutional instability as outcomes

The inequality inherent in the agrarian structure, the ethnic diversity, the continued in-migration and the spatial distribution of forests have been argued to militate against community forestry in the Terai (Shrestha and Budhathoki, 1993; Hobley, 1996). Chakraborty (2001) claims that neither of these reservations survive closer scrutiny. Using case study evidence from Banke and Danusha districts in Western and Eastern Terai, he claims that community forestry offers a viable solution to forest management problems also in the Terai. Our research suggests that neither heterogeneous communities nor other features obscure the finding that the condition of forests managed by Terai FUGs has improved, confirming obser-

vations made by others (Baral and Subedi, 2000; Chakraborty, 2001).⁹ However, successful conservation or regeneration provides a too narrow remit for judging community forestry a success.

Moreover, a crucial dimension is missing from the above discussion, namely the high commercial value of some Terai forests. Table 4 illustrates the diversity in forest values in the FUGs covered by the present study. Notice that six FUGs control forests worth less than Rs 100,000 (US\$¹⁰ 1333) per member household while the forest value per member household at the top end is Rs 1,630,000 (US\$ 21,733). The variation in the prospects of local forest resources uplifting the poor are duly reflected in these contrasts.

While observations from small, purposive samples are subject to caveats, our evidence suggests positive relationships between high forest values and (i) a substantial hidden economy (ii) a skewed benefit distribution and (iii) serious institutional instability. We first consider impacts on equity and proceed to discuss institutional instability. The hidden economy is addressed in Sections 5 and 6 below.

⁹ Notice the emphasis on FUGs. Chakraborty (2001) found that new access rules implemented by FUGs forced poor households to resort to government forests to meet livelihoods needs. It is quite possible, therefore, that improvements in community managed forests coincide with degradation of government forests. See Branney and Yadav (1998) for a more general statement of the impacts of community forestry on forest conditions.

¹⁰ Using an exchange rate of 1 US\$=75 Rs.

Table 4
Comparison of sample FUGs by area, resource value and resource value per household^a

Code of CF	Area (ha)	Rank	Membership in number of households	Forest value million Rs (million US\$)	Forest value	
					In million Rs per household	Rank
C1	355.0	2	665	1084 (14.45)	1.63	1
D1	205.0	3	613	880 (11.73)	1.44	3
P	600.0	1	1324	493 (6.57)	0.37	4
B	46.3	6	101	152 (2.02)	1.50	2
K (Buffer Zone)	22.5	10	207	74 (0.98)	0.36	5
HJ	14.4	11	460	70 (0.93)	0.15	7
AT	54.0	5	336	59 (0.79)	0.17	6
D2	67.1	4	1221	53 (0.71)	0.04	10
J	30.0	8	241	32 (0.43)	0.13	8
BM	40.5	7	600	15 (0.20)	0.03	11
S (Buffer Zone)	24.3	9	135	14 (0.19)	0.10	9
S	11.3	13	158	3.5 (0.05)	0.02	12
B–S (Buffer Zone)	14.0	12	150	1.8 (0.02)	0.01	13
G (Buffer Zone)	3.5	14	41	0.2 (0.00)	0.004	14

Source: Chetry et al. (2003).

^a The estimated forest values are gross values and not adjusted for transport to a roadpoint. While estimates of such costs are provided in the empirical example in Section 6, the above ranking is sensitive to this omission for interior forests facing particularly high transport costs. B FUG has no easy road connection, a disadvantage that must be considered when interpreting Table 4.

It is useful to distinguish between equity as a cause and as an effect, i.e. the impacts of inequality on collective action, on the one hand and the impacts of community forestry on equity on the other. While associations between various forms of inequality and collective action have received much theoretical and empirical attention (e.g. [Olson, 1965](#); [Baland and Platteau, 1999](#); [Varughese and Ostrom, 2001](#); [Dayton-Johnson and Bardhan, 2002](#)), the latter remains distinctly under-researched.

One important theoretical exception is [Baland and Platteau's \(1999\)](#) simultaneous analysis of efficiency and distributional outcomes. They show that initial wealth disparities impact on fishery management and on the welfare of rich (one) and poor (a group) fishermen when the latter are confronted by binding credit constraints. Compared to a situation with no credit constraints, fewer boats will enter the fishery and both the condition of the resource and the welfare of the rich and poor improve. The credit constraints thus compel the poor to exercise restraint, limiting their investment in fishing vessels—the wealthy fisherman responds by reducing his number of boats, which moves the equilibrium closer to a social optimum. In this example maximum inequality makes everyone better off and prevents over-exploitation of the fish stock. In a situation of open access and natural re-

source based livelihoods, it is therefore possible that relaxing credit constraints may reduce the welfare of the rich and poor while prompting environmental degradation.¹¹ One problem with this argument is that few forest management regimes in the Terai fit the open access bill. The appropriate analytical focus is therefore on forest value and wealth inequality as “drivers” and inequity and instability as outcomes within the formal management structure of Terai FUGs.

Initial disparities in the access to credit and cash and to positions as office holders may provide local elites with sufficient incentives to adopt conservation friendly strategies.¹² Whether wealth inequality within FUGs, as in [Baland and Platteau's](#) example, raise the standard of living of the poor is more questionable. Evidence from the Terai and elsewhere suggests that the new access rules adopted by FUGs have short term adverse effects on the poor, by curtailing access

¹¹ Readers familiar with the literature on market based poverty traps will notice a parallel here (see [Banerjee and Newman, 1993](#); [Bardhan and Udry, 1999](#) for a more general discussion); the point is that the otherwise benign effects of improved market access may be compromised in the presence of negative externalities.

¹² This incentive may be diluted when resource exploitation or access becomes more widely available.

to local forests (Springate-Baginski et al., 1999; Chakraborty, 2001).

Chhetry et al. (2003) illustrate the range of strategies households of various caste and socio-economic backgrounds deploy to adjust to new access regimes in the Terai: adjustments include reallocating activities, shifting membership to other FUGs or in more drastic cases, complete shifts of livelihood strategies.

A common presumption is that the poor and rich have symmetric opportunities to benefit from a resource. This is not the case for the fishery example above and is also, as we shall see, misleading when it comes to collection of or gaining access to high-value forest products for poor members of Terai FUGs.

While deepfelt in Nepal, distributional concerns are often voiced as general allegations of ‘elite capture’ (e.g. Baral and Subedi, 2000).¹³ A few recent studies partly remedy the paucity of empirical studies of distributional outcomes from community forestry. Adhikari et al. (2004) present an econometric analysis of the impact of the private endowments of FUG member households on forest access using data from the Middle Hills. Both fuelwood and tree and grass fodder collection were influenced by household characteristics. While low caste and more educated households collect less fuelwood, livestock and other asset holdings were key determinants of tree and grass fodder collection.

Bhattarai and Ojha (2000) examined the impact on three socio-economic groups in two forestry user groups in the Koshi Hills, using a benefit–cost ratio to measure disparity. In both user groups, households face two types of forestry operation costs; costs of subsistence collection and transaction costs. The former were calculated from records of time spent in collecting forest products and stipulated opportunity costs of time. Transaction costs cover time spent in meetings, assemblies for planning, in collective forest management activities and so forth. Transaction costs accounted for roughly 10% of the total costs of fo-

resty operation. Benefits were estimated by assigning “subjective” (group based) monetary values to each forest product. In both absolute and relative (B/C-ratio) terms, the highest benefits accrued to households in the medium wealth category. The average net benefit received by the medium wealth group in the two groups amounted to US\$ 5.80. Differences between the rich and medium group were marginal.

Richards et al. (2003) argue that time needed (average hours per day) for collecting a bundle of subsistence products per unit of household demand provides the most reasonable measure of inequality within FUGs. Accordingly, distance from the resource (and quality of household labour) will be key determinants of inequity in outcomes from community forestry. While these studies bring the debate on distributional outcomes forward, the focus on subsistence collection overlooks disparities created by other mechanisms for forest product allocation.

This is a particularly serious omission in the Terai where allocation of the most valuable forest product, hardwood timber, takes place through quotas that individual member households purchase from the FUG.

While inequities uncovered by a focus on subsistence collection thus provide guidance about certain types of institutional reform needs, the more pressing aspects, in the Terai context, would be likely to go unnoticed. The empirical examples presented below demonstrate the intimate link between serious inequities and such alternative mechanisms for forest product allocation.

Turning now to the issue of institutional instability, Chakraborty (2001) suggests that an FUG is stable if compliance rates are high and if rules remain fairly constant over time. Frequent changes in and violations of rules would thus be evidence of instability. In Chakraborty’s words (2001, p. 346):

“The community forestry management institutions have shown a high degree of stability in all except one of the eight forest groups visited. All groups protected their forests informally for several years. Furthermore, the regimes have remained stable after the transfer of formal property rights: rules have seldom been altered and compliance has been high.”

Our findings disagree with this narrative because the above definition of institutional stability would

¹³ For more precise, albeit largely descriptive analysis of elite capture, see Saxena and Sarin (1999). Kumar (2002) reviews the largely anecdotal evidence on “the relative benefits to the poor and non-poor that flow from a decentralized system of forest management.”

overlook the often dramatic turnovers of FUG executive bodies observed in some Terai FUGs. In addition, our evidence points towards a clear association between forest value and institutional instability of this latter kind. The following sections develop these arguments and suggest that the hidden economy of a user group provides a useful concept for grasping the roots of inequity and institutional instability.

5. Elite capture and the hidden economy of a Forestry User Group

The hidden economy of a forest user group has two principal constituents; hidden transactions and hidden subsidies. Hidden transactions involve illicit acts such as illegal harvesting of timber, accepting bribes or engaging in other types of embezzlement, such as theft from FUG-funds. While corruption in natural resource management is well known, if not much studied (e.g. [Azhar, 1993](#); [Robbins, 2000](#)) its true scale is often hard to ascertain.¹⁴ Across our study sites petty corruption is the most common reason for why elected FUG office holders are forced to step down prematurely.

Hidden subsidies, in contrast, are subsidies that do not feature in FUG accounts. While timber is the dominant revenue source for FUGs in the study area,¹⁵ official accounts conceal the large subsidies received by members buying timber from the FUG. The subsidy results from the margin between the member price (typically Rs 300 (US\$ 4) per cubicfoot (cft)) and the (local) market price (e.g. Rs 600 (US\$ 6) per cft). In contrast to hidden transactions, there is nothing wrong with a subsidy per se; realising its cash

¹⁴ For a discussion of the bureaucratic hurdles and side-payments involved in selling timber from private lands in Jharkand, India, see [Corbridge and Kumar \(2002\)](#). The situation in the Terai is quite similar, with a heavily regulated forest sector. A variety of permits are required before timber from private lands can be legally sold with side-payments expected at all levels. Further extractions take place via roadblocks. There were, for instance, seven environmental checkpoints between the Eastern parts of the study area and Kathmandu—all demanding bribes to allow vehicles to proceed.

¹⁵ In the Livelihood Forest Project's database for FUGs in Rupandehi district, 8 out of 33 FUGs (for which budgets were available) have annual revenues exceeding Rs 500,000 (US\$ 6666). On average, timber sales account for 75.4% of the revenues in these eight FUGs.

value is, however, illegal and violates present regulations.¹⁶ Moreover, large subsidies favouring households at the upper end of the income distribution represent a source of legitimate normative concern.

For a valuable forest product the FUG can charge a price and require advance payments that effectively exclude poor members from access while allowing those who can afford to a generous profit margin (rent). FUG price and payment policies thus enable better off households to siphon off a large chunk of the annual benefits generated by local forests.

The sizeable annual revenue flows created by the timber economies of many Terai FUGs have turned user groups into complex organisations with formidable bureaucratic structures (see Appendix A for the organisational chart of one large FUG in the study area). However, the evidence reported below suggests that this organisational complexity has failed to provide the means to control the hidden economy of FUGs and thus failed to eliminate FUG vulnerability to elite capture.

6. Empirical estimates of the hidden economy of a forest user group

6.1. The size and distributional profile of hidden timber subsidies

The following analyses of distributional bias and institutional instability are based on observations from one Terai FUG controlling high value forests.¹⁷ In this FUG, rhetoric conveys the impression of transparent and well-organised processes where members (e.g. those who apply) are awarded timber quotas as per needs and subject to availability.

¹⁶ The potential size of the hidden economy of a Terai FUG is positively correlated with forest value. The potential pecuniary gains from illegal harvesting and the potential value of a hidden subsidy will both increase with the value of the forest. However, the de facto size and attributes of the hidden economy will be determined by internal or external regulations, e.g. by mechanisms to control illegal harvesting, penalise embezzlement and by policies to safeguard equity in benefit distribution.

¹⁷ This FUG is not an outlier and a second FUG with very similar characteristics in our sample would produce an almost identical story; the policies for allocating forest products are the same and institutional instability persistent, if slightly less dramatic.

The FUG covers the costs of felling, sawing and transporting timber from the forest to the user group office in the local bazaar. While timber use is officially restricted to construction of houses and other domestic purposes, the hidden subsidy provides a strong incentive for circumventing this rule.

As noted above, member households will typically purchase timber from the FUG at Rs 300 (US\$ 4) per cft. With local market prices ranging from Rs 450 (US\$ 6) to Rs 600 (US\$ 8), a maximum annual quota of 50 cft will be worth the same as a handout of between Rs 7500 (US\$ 100) and Rs 15,000 (US\$ 200). With daily agricultural wages for female workers at Rs 70 (US\$ 0.93), the handout has a value equivalent to earnings from 214 workdays.¹⁸

The contrast to estimates of average net benefits from community forestry in Bhadaure and Patle FUGs in the Koshi hills could hardly be more striking (Bhattarai and Ojha, 2000).

Measured in US\$, these annual benefits amounted to between US\$ 4 and US\$ 5.8 per household, while a single timber quota in the Terai FUG is worth US\$ 200. This brings out the dramatic contrasts in the value of benefit flows between Terai and Hill forests and shows why subsistence based evaluations of disparities in outcomes at best can be partial.

Confronted with binding cash and credit-constraints, poorer households are unable to pay the advance price (Rs 15,000 (US\$ 200) for a 50 cft quota) required to avail of these timber quotas and are, as a result, effectively excluded from receiving these extremely valuable “handouts” from the FUG.

Fig. 1 disaggregates the value and net benefits generated by the permitted timber cut based on the 2001–2002 FUG budget. At local market prices,¹⁹ the budgeted cut of 5000 cft is worth Rs 3,000,000 (US\$ 40,000). The user group pays for cutting and trans-

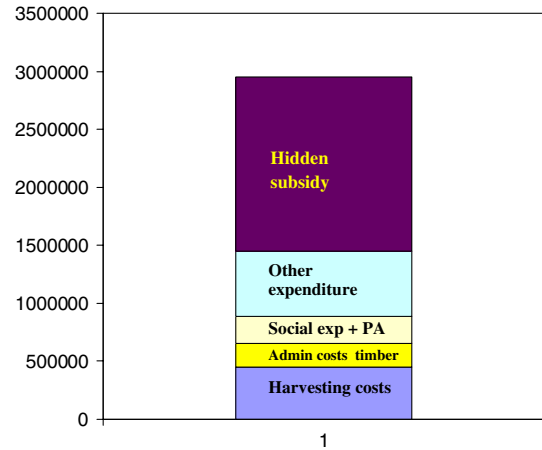


Fig. 1. The distribution of the value of budgeted timber cut.

porting timber from the forest to the FUG-office incurring costs of around Rs 90 (US\$ 1.2) per cft. These costs feature as harvesting costs in Fig. 1. The FUG also incurs annual operational and administrative costs, and if we assume that 50% of administrative and other operational costs are attributable to timber (the budgeted timber share of FUG revenue for the same year is 63%), a further Rs 225,000 (US\$ 3000) can be deducted to arrive at the annual net benefit from hardwood timber. The net benefits are thus:

NET BENEFITS=Gross value of allowable (budgeted) timber cut (5000 cft at Rs 600/cft) – Costs of harvesting and transport to FUG-office (5000 cft at Rs 90/cft) – 50% of administrative and other operational costs (Rs 225,000)=Rs 2,325,000 (US\$ 31,000).

These net benefits amount to Rs 3,839 (or US\$ 51) per member household or the equivalent of earnings from 55 days of female agricultural wage labour. An FUG with a strong egalitarian orientation could thus award each member household US\$ 51 every year, just from timber. The contrast between this egalitarian ideal and current practice is, however, striking.

The net benefit may be divided into the hidden subsidy usurped by households awarded timber quotas and other activities funded by the user group. The hidden subsidy, worth Rs 1,500,000 (US\$ 22,500) eats up 63.8% of this annual net benefit. Present policies for payment and quota allocation ensure that this subsidy displays a stark distributional bias favouring households at the upper end of the income distribution.

¹⁸ The sale of timber by FUGs to members is exempted from taxation. While a recent Supreme Court ruling has established that a tax rate of 40% of FUG sales outside the user group is unconstitutional, many groups have anticipated a 40% tax on sales of timber outside the group. In one of the surveyed FUGs “the group has to pay compulsorily an amount of 10% of the total income made by the sales and distribution of forest products to the VAT office and if the group supplies forest products outside the users; the group has to deposit 40% of the amount received from the sale to the account of the government revenue through DFO and municipality”.

¹⁹ A market price of Rs 600 (US\$ 6) per cft is used in this example.

FUG expenditure and other activities include social welfare support to assist households that experienced misfortune and social infrastructure investments, including poverty alleviation (PA). These budget posts add up to Rs 235,000 (US\$ 3133). This is equivalent to 15% of the value of the hidden subsidy and 10% of the annual net benefit generated by the hardwood timber.²⁰

Suppose now that 40% of the member households are poor and that social infrastructure targets this group; the indirect benefits accruing to the group will be worth Rs 960 (US\$ 12.8) per household per annum. This remains above the benefits received by the middle and high income groups in Koshi Hills (Bhattarai and Ojha (2000)). Suppose further that timber quotas are allocated equitably²¹ among middle and high income households, who by assumption make up the remaining 60% of the user group. The average value of the hidden subsidy accruing to these middle and high income households would now equal Rs 4100 (US\$ 54.7) per annum.

What are the implications for the relationship between wealth inequality and distributional outcomes? It is quite clear that the present policy regime (subsidies and advance payment) and wealth inequality will lead to an increase in inequality over time since only those who can afford to pay will be in a position to avail of timber quotas.

6.2. Hidden transactions

The preceding example was based on the 2001–2002 FUG-budget. We now attempt to compare the relative size and distributional profile of the two constituents of the hidden economy. The estimate for hidden transactions is arrived at in the following way: The allowable cut for 2002–2003, specified by the revised Operational Plan, was 3671 cft. A more recent circular from the District Forest Office

²⁰ Notice, also, that current regulations require that user groups spend 25% of their annual revenue (e.g. Rs 375,000 in this example) on forest management activities. These investments fall into the “other expenditure” category and place another important restriction on FUG activities.

²¹ We thus presume fairness and no side-payments in quota allocation. This generates a cautious estimate of the extent of elite capture. Nepotism in the allocation of annual quotas would strengthen the extent of elite capture.

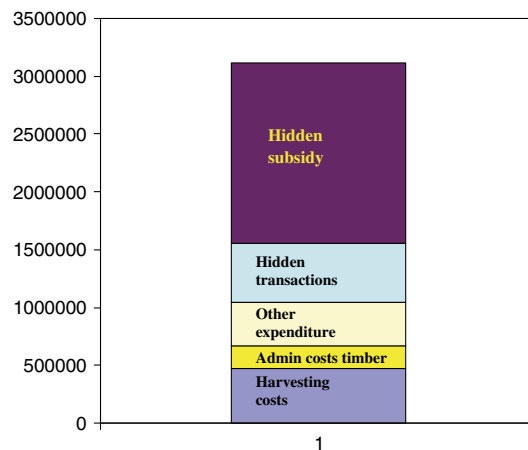


Fig. 2. The relative size of hidden transactions and hidden subsidies.

instructed the group to limit its harvest to 2820 cft. Members of the Committee, however, organised harvesting of a total of 5190 cft of high quality (and 200 cft of low-quality timber).²² Of this total, 4333 cft was reported as the official annual harvest to the FUG Assembly. Two layers of deception were thus in place. The first relates to the discrepancy between the revised permitted cut and the figure reported to the FUG Assembly. This discrepancy could not prevail without the complicity of the local forest authorities. Evidence of substantial kickbacks to the local forest ranger supports this conjecture. The second layer of deception relates to the gap between the de facto cut and the cut reported to the FUG Assembly. Local estimates thus suggest that the Committee hid altogether 857 (+200) cft from the official FUG record. Fig. 2 illustrates the two constituents of the hidden economy presuming that admin costs attributable to timber are the same as above. The category “other expenditure” is now calculated as a residual.

The total value of the timber harvest is Rs 3,113,000 (US\$ 45,106) and the net benefit Rs

²² Can we be confident about the reliability of these figures? Firstly, different groups of local community members produced similar figures, suggesting that this, in the worst case, was a consistent rumour. As will be seen below, however, the window of opportunity for extra-legal harvesting is well-defined within this FUG. Moreover, information about the scale of transgressions was leaked by Committee members to other members of the local community. Of an estimated total extra-legal harvesting of 857 cft, we have credible accounts for the whereabouts of roughly 750 cft.

2,446,000 (US\$ 32,613). The value of the first constituent of the hidden economy, hidden transactions amounts to Rs 436,000 (US\$ 5813) or 14% of the net benefit. The distributional profile of these hidden transactions is extremely skewed, and divided between members of the FUG Committee and the local forest ranger. One part of the story is that 11 Committee members disposed of timber worth Rs 132,000 (US\$ 1,760) to a local sawmill owner.²³ Moreover, the present Chairman subsequently claimed that 425 cft had been given free of cost to the forest ranger, while the ranger himself claims that he received only 200 cft.²⁴ In addition, the present Chairman admitted to have kept 85 cft of timber which he planned to return to the user group.

It follows that problems of monitoring, transparency and the enforcement of accountability pose crucial challenges for Terai user groups. Another interesting observation is that the situation, at least in this case study FUG, has deteriorated over the last couple of years, with hidden transactions on the increase. The FUG's resilience to elite capture has thus not been strengthened, as new loopholes to take part in illicit actions have surfaced (see below for further details).

6.3. Institutional instability

The combination of high value and vulnerability to elite capture pinpoints a potential problem of selectivity into leadership positions, attracting candidates motivated primarily by private pecuniary gains. Competition for office would thus be expected to be positively correlated with the scope for such private gains. The evidence reported below suggests that the scramble for office control is more complex, but has intensified over time. In the study area, executive turnovers are frequent in user groups controlling high value forests, but also occur elsewhere. In the case study FUG, leadership instability has been a serious problem since the group's formation. With a prescribed Committee tenure of 5 years, consecutive

²³ The question about this misuse of timber was raised in a meeting held in the first week of October 2002.

²⁴ In the national newspaper of the government (The Gorkhapatra, date withheld), three of the FUGs surveyed were accused of giving 400, 260 and 1000 cft to the local forest ranger. The ranger was at the time of writing suspended pending the outcome of a DoF investigation.

Committees have been dissolved with remarkable regularity between 1993 and 2001 as shown in Table 5.

Rather than competition for the post of Chairman, the initial years were characterised by problems of finding suitable candidates prepared to stay in the job. The first Chairman, a Nepali Congress member, played a distinguished role in initiating forest protection in the area. A faction led by Mr I (CPN UML) and his supporter Mr G, accused the Chairman of inflating FUG expenditures. The duo had support from a discontented group of Nepali Congress members, including Mr C (who had opposed the CF program because of anticipated disruptions to large scale fuelwood supply). Allegations of account irregularities persisted and under the leadership of an external auditor, a committee was appointed to screen the accounts. The report, which took one year to complete, recommended that Rs 107,000 be repaid to Mr A to cover personal expenses on stationary, registration and so on. The hostile faction was not convinced by the report's conclusions and demanded a new audit. A second auditor was appointed and exonerated Mr A, advising that Rs 57,000 be repaid to him. In spite of these outcomes, the pressure on the Chairman continued and ultimately forced him to resign.

The third Chairman, Mr D was a teacher and widely regarded as a neutral candidate. He was also a default candidate since no one else was prepared to stand at this juncture. The main reason for this reluctance was that the user group had accumulated debts in its early years. Due to other commitments, Mr D felt that he didn't have sufficient time to do the job properly and stepped down on his own initiative. The hypothesis of intense scramble for control thus per-

Table 5
Sequence of Chairmen in case study FUG

Name	Start	End
Mr A	05/09 1993	24/11 1995
Mr A	24/11 1995	23/03 1996
Mr C	23/03 1996	18/01 1997
Mr D	18/01 1997	02/10 1997
Mr E	02/10 1997	05/12 1998
Mr F	05/12 1998	18/12 1999
Mr G	18/12 1999	04/12 2000
Mr B	04/12 2000	23/11 2001
Mr A	23/11 2001	Jan 2003 (last field visit)

forms poorly at this stage of the FUG's life cycle.

The cases of the next two Chairmen indicate how relationships to the DFO and other offices of authority may impact on the predicaments of aspiring leadership candidates. Mr J (who doesn't feature on the above list due to his record short 6-day Chairmanship) was pressured by the Assembly into accepting the Chairmanship. As a brick factory owner, he already had a complex relationship to the DFO, having been caught during illicit fuelwood collection. Fearful of further reprisals from the DFO, he decided to step down. The next Chairman, Mr E cleared the debts of the FUG and established a nursery. However, Mr A and an accomplice submitted a petition stating that Mr E had illegally cut a dry (dead and hollow) tree. The DFO decided not to force penalties but instead to warn the Committee. Mr A, who was well connected because of his pioneering role in the CF-movement in the Terai, threatened to bring this inaction by the DFO to the notice of higher offices, and an Assembly was called where Mr E was forced to step down.

Following the quiet resignation of the sixth Chairman, Mr G was supported by a solid majority. During his leadership the forest road was constructed and several infrastructure/development projects started.²⁵ He was keen to strengthen the transparency of the FUG's accounting system, arguing that accounts should be presented monthly. During his reign, the Assembly agreed to allocating 20% of annual income to poverty alleviation (projects focussing on medicinal plants, livestock), a proposal that was never implemented. His radical agenda to activate the Board, which involved a change in its composition and a removal of certain responsibilities related to timber harvesting became the nails in his coffin. Allegations about misuse of funds were lodged and followed by attempts to intimidate and humiliate Mr G in public. He found the pressures unbearable and decided to step down.

During Mr B's Chairmanship there was a shortage of cash to cover harvesting expenses. The FUG borrowed Rs 40,000 (US\$ 533) and Mr B handed this sum to the Office Secretary and later attempted to mislead the user group by submitting a counterfeit expenses bill covering the same amount. This became

a source of dispute between the Office Secretary and the Chairman, and a Committee meeting found that the money had in fact not been spent, forcing the Chairman to resign. The circle is complete when Mr A asks the Assembly for a new term, promising accountability. During our field visit, members were agitated over the absence of the latest accounts amidst serious allegations of illegal harvesting.

7. Analysis and discussion

Terai user groups face serious challenges in terms of monitoring the actions of office-holders, the actions of representatives of the forest authorities (i.e. the forest ranger) and collusion between the two. That the local leverage of the DFO is strong and may create problems for a recalcitrant user group is suggested by the 6-day tenure of one FUG Chairman, whose relationship with the DFO was troubled from the start. However, while the DFO issued a warning rather than call for Mr. E's resignation, Mr. A, by using his external networks, was able to put pressure on the DFO. One tactic deployed by the DFO is to hint that anonymous complaints against FUG office-holders that could form the basis for future cases have been received. Attempts at challenging the status quo may thus meet with a vigorous external response. However, the vested interests inside the user group are also strong, as illustrated by Mr. G's resignation. Radical and reform-friendly individuals can expect to pay a heavy personal price.

The squabbles over auditing demonstrate that verification of the accuracy and reliability of account statements is demanding, time-consuming and a potential source of considerable confusion. General calls for empowerment and participation, the usual policy prescription in community forestry, is naïve given the inevitable complexity of monitoring and accounting in contexts where local forests generate substantial annual revenues. One of our interviews with a Tharu household illustrates the gravity of this problem rather well: An adult woman argued that her illiterate husband found it impossible to make sense of the procedures and business of Assembly meetings. The level of knowledge required to meaningfully participate in meetings thus goes much beyond what conventional training programmes and awareness raising exercises

²⁵ There were only two candidates for this election.

typically would provide. The objective of meaningful participation within large and often complex Terai FUGs confronts policy makers with important new challenges.

7.1. Controlling the hidden economy

7.1.1. Hidden transactions

The scope for institutionalising mechanisms to control hidden transactions must be based on careful analysis of the scope for illegal harvesting. Within our case study FUG, the window of opportunity for illegal harvesting is reasonably well-defined. In general, the Committee prepares the FUG budget which is presented to the Assembly for approval. In preparing the budget, the Committee estimates revenues from timber and other sales and activities and expenditures. The precise budget deficit will be known only after all agreed activities have been implemented. The latter is an interesting point since rather than cutting costs, the Committee will meet inflated expenditures to complete agreed activities by harvesting more trees.

Whereas the main annual timber harvest offers limited room for manipulation, the resulting second harvest typically goes unmonitored, presenting a window of opportunity for creative maneuvering. Such second rounds of harvesting were observed twice in recent years: in 2000 and 2001 under the Chairmanship of Mr B and Mr A. These second harvests provide the Committee with an incentive to under-budget the expenditure side or overstate revenues from other revenue sources than timber.²⁶

7.1.2. Hidden subsidies and new mechanisms for forest product allocation

There are noticeable differences between mechanisms for distributing forest products among users in FUGs in the Terai (and more generally in Nepal) and practices observed elsewhere. Members of a local community in Japan were, for instance, deeply concerned over certain aspects of fairness in mechanisms for distributing benefits generated by a common pool resource. McKean (1986) argues that

“there was an overriding sense that the access to the commons should be distributed according to some principle of fairness that ignored existing maldistributions in private wealth.” Moreover, mechanisms for benefit distribution involved random distributions and assignment by lottery. It also involved scrupulous attention to book-keeping to keep track of contributions and thus assess fairness in shares based on contributions (*ibid.*).

Herein lies a number of possible solutions for Terai FUGs. One problem with the present system, as noted above, is that the combination of wealth inequality and present FUG policies accentuate inequality over time. There are two potential solutions to this problem—to reform FUG policies (or the regulatory framework of community forestry) or to remove the credit constraints preventing access by the poor. A widely held belief among protagonists of community forestry in Nepal is that guidelines for FUG-formation, if properly adopted, will resolve problems of this kind. We are not convinced by this argument and suggest, instead, the implementation of reforms that (a) change the mechanisms for allocating valuable forest products or (b) narrow the margin between local market prices and the price paid by FUG members, thereby reducing the size of the hidden subsidy.

8. Conclusion

This paper argued that community forestry in the presence of high value forests present policy makers with new challenges about which experiences from other parts of Nepal provide only limited guidance. In West Central Terai, high forest value was argued to be closely linked to problems of elite capture and institutional instability. Resource value as a potential driver of pivotal outcomes under community based natural resource management was thus emphasised. The problem of elite capture was aggravated by the presence of autonomously adopted FUG-policies that effectively exclude poor member households from access to benefits accruing from hardwood timber. *Ceteris paribus*, this will increase inequality over time.

The paper presented conservative estimates of the extent to which local elites are able to siphon off the net benefits generated by local hardwood forests, while describing in some detail the story behind

²⁶ The 2001–2002 budget provides an excellent example of how this might work: The Committee budgeted for revenues from sales of fuelwood of Rs 600,000 (US\$ 8000) whereas the realised figure was Rs 58,000 (US\$ 773).

observations of high turnovers in user groups controlling high value forests. The argument that an unmodified version of community forestry is viable for the Terai and the interpretations of institutional (in) stability in the existing literature should therefore be adjusted to capture a more complex reality. In short, the high value of some Terai forests adds important, new challenges to decentralised forest management.

Moreover, institutional reform agendas need to focus on measures aimed at controlling obnoxious aspects of the hidden economies of user groups in the Terai. This is necessary both to remove incentives for rent-seeking by candidates for FUG-positions, and to secure a more equitable distribution of benefits.

We showed that evaluations of distributional outcomes from community forestry focusing on subsistence collection of forest products would be biased by the neglect of the FUG hidden economy. The implications of this neglect are not uniform across FUGs but are likely to be particularly serious in groups controlling high value forests. Finally, we showed that notions of meaningful participation in large and often complex Terai user groups pose steeper challenges than what is presumed in most discourses on participation and forest management.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.ecolecon.2005.05.021](https://doi.org/10.1016/j.ecolecon.2005.05.021).

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